CLAIMS

What is claimed is:

1. A method for manufacturing an organic film for organic light emitting diodes, the organic film having areas with modified properties, comprising the steps of:

providing a substrate;

coating an organic material thereon to form an organic film; and

applying a dopant to areas of the film to modifiy the properties of the film in desired areas.

2. The method of claim 1 wherein the dopant is applied by application of liquid droplets.

3. The method of claim 2 wherein the liquid droplets are applied by ink-jet printing.

4. The method of claim 2 where the substrate is heated to reduce the size of the modified area.

5. The method of claim 1 wherein the dopant is applied by screen printing.

6. The method of claim 1 wherein the dopant modifies the light emitting properties of the organic film.

7. The method of claim 6 wherein the dopant comprises red, green or blue dyes.

8. The method of claim 7 wherein the dopant includes coumarin and nile red.

9. A method of manufacturing a locally modified organic film comprising the steps of:

providing a substrate;

applying an organic coating having a dopant; and

removing the dopant from areas of the coating.

10. The method of claim 9 wherein dopant is removed from the coating by a solvent applied to a surface of the coating.

11. The method of claim 9 wherein the dopant is removed from the coating by annealing which caused the dopant to migrate from the coating.

12. The method of claim 10 wherein a mask is patterned on the coating prior to applying the solvent to remove the dopant in a pattern.

13. The method of claim 11 wherein a mask is patterned on the coating prior to annealing to remove the dopant in a pattern.

14. The method of claim 10 wherein the solvent is applied in a pattern onto the coating to remove the dopant in a pattern.

15. A method of manufacturing a locally modified organic film comprising:

providing a first layer having a dopant;

providing a second layer on the first layer; and

transferring the dopant from the first layer to the second organic layer.

16. The method of claim 15 wherein the dopant is transferred in selected areas from the first layer to the second organic layer.

17. The method of claim 16 wherein masking means is provided on the first layer prior to providing the second organic layer, and the dopant is transferred from the first layer to the organic second layer in areas not masked.

18. The method of claim 16 wherein the first layer with the dopant is patterned on a substrate, and the dopant is transferred to second in the pattern of the first layer.

19. A method of manufacturing a locally modified organic film comprising of:

providing a first layer of material;

applying a dopant in a pattern to the first layer;

providing a second layer comprising an organic material; and

transferring the dopant from the first layer to the second layer in the pattern.

20. The method of claim 19 wherein the dopant is applied by application of liquid droplets.

21. The method of claim 20 wherein the liquid droplets are applied by ink-jet printing.

22. The method of claim 20 where the substrate is heated to reduce the size of the modified area.

23. The method of claim 19 wherein the dopant is applied by screen printing.

24. The method of claim 19 wherein the dopant modifies the light emitting properties of the organic film.

25. The method of claim 24 wherein the dopant comprises red, green or blue dyes.

26. The method of claim 25 wherein the dopant includes coumarin and nile red.

27. The method of claim 19 wherein the dopant is transferred by annealing.

28. A method of locally modifying properties of an organic film for an OLED comprising the steps of:

providing a substrate;

applying an organic coating thereon;

depositing a dopant or material containing a dopant thereon; and

causing the dopant to migrate into the organic coating.

29. The method of claim 28 wherein the dopant is applied to the organic coating in a pattern, and the dopant forms the pattern in the organic layer after the dopant migrates thereinto.

30. The method of claim 29 wherein the dopant is applied by liquid droplet application.

31. The method of claim 29 wherein liquid droplets are applied by ink jet printing.

32. The method of claim 29 wherein the dopant is applied by patterning dry powder onto the organic coating.

33. The method of claim 29 wherein the dopant is applied by placing a patterned thin foil containing the dopant in close contact with the organic coating.

34. The method of claim 29 wherein the dopant is caused to migrate into the organic layer by the application of heat.

35. The method of claim 30 where the substrate is heated to reduce the size of the modified area.

36. A method of manufacturing a locally modified organic film comprising the steps of:

providing an organic film;

covering the organic layer with a patterned barrier;

applying a dopant or material containing a dopant over the organic layer and the barrier; and

causing the dopant to migrate into the organic film in areas exposed through the barrier.